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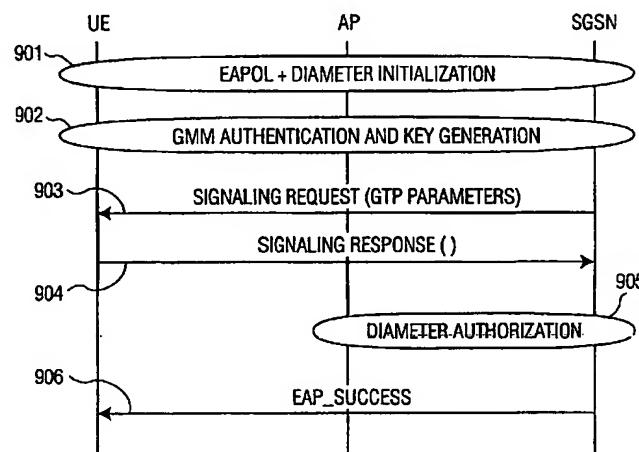
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(54) Title: AUTHENTICATION OF A WLAN CONNECTION USING GPRS/UMTS INFRASTRUCTURE



(57) Abstract: A method for communicating between a cellular system and a client terminal such as a mobile terminal by way of a standard wireless LAN and the Internet allows data communications to traverse the core of the cellular network, thereby allowing monitoring of the time and volume usage by the subscriber for billing purposes. The mobile terminal has a communication protocol for communicating with the wireless LAN, over which is a EAP/EAPOL protocol. A Radio Adaptation Layer (RAL) protocol overlies the EAP/EAPOL protocol. At the cellular system, a Serving GPRS Support Node establishes initial control contact with the mobile terminal by way of EAP/EAPOL. During authentication, the Support Node gives the mobile terminal parameters for an alternative tunnel connection. Once authorization is complete, the mobile terminal closes the EAP/EAPOL connection and opens a new connection tunnel to the Support Node using the parameters.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/012433 A1 (EKBERG JAN-ERIK G ET AL) 31 January 2002 (2002-01-31) abstract figures 1,2,8,16 paragraph '0256! - paragraph '0262! paragraph '0342! - paragraph '0350! ----- WO 03/094438 A (GREGORIO RODRIGUEZ JESUS ANGEL ; MONJAS LLORENTE MIGUEL ANGEL (ES); ER) 13 November 2003 (2003-11-13) abstract paragraph '0016! - paragraph '0039! paragraph '0044! - paragraph '0047! claims 1-13 ----- -/-	1-20
P, X		1-20

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	FR 2 842 055 A (NORTEL NETWORKS LTD) 9 January 2004 (2004-01-09) page 13, line 18 – page 14, line 22 figures 1-4 page 1, line 31 – page 9, line 5 & US 2002/012433 A1 (EKBERG JAN-ERIK G ET AL) 31 January 2002 (2002-01-31) -----	1-20
A	"Broadband Radio Access Networks (BRAN); HIPERLAN Type 2; Requirements and Architectures for Interworking between HIPERLAN/2 and 3rd Generation Cellular systems; ETSI TR 101 957" ETSI STANDARDS, EUROPEAN TELECOMMUNICATIONS STANDARDS INSTITUTE, SOPHIA-ANTIPOLIS, FR, vol. BR, no. V111, August 2001 (2001-08), XP014005038 ISSN: 0000-0001 paragraph '0006! – paragraph '7.2.1! paragraph '0008! – paragraph '08.2! -----	1-20

Information on patent family members

International Application No
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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 2002012433	A1	31-01-2002	AU BR CA CN EP WO JP ZA	2683801 A 0109651 A 2403521 A1 1430835 T 1273128 A1 0176134 A1 2003530012 T 200207299 A		15-10-2001 22-04-2003 11-10-2001 16-07-2003 08-01-2003 11-10-2001 07-10-2003 02-05-2003
WO 03094438	A	13-11-2003	WO	03094438 A1		13-11-2003
FR 2842055	A	09-01-2004	FR WO	2842055 A1 2004006532 A1		09-01-2004 15-01-2004
US 2002012433	A1	31-01-2002	AU BR CA CN EP WO JP ZA	2683801 A 0109651 A 2403521 A1 1430835 T 1273128 A1 0176134 A1 2003530012 T 200207299 A		15-10-2001 22-04-2003 11-10-2001 16-07-2003 08-01-2003 11-10-2001 07-10-2003 02-05-2003